Exponential and Logarithmic Identities

I've jotted down some important identities. For a more thorough discussion/list:

- exp identities
- log identities

$$a^p \cdot b^p \equiv (ab)^p$$

$$b^m \cdot b^n \equiv b^{m+n}$$

$$\frac{b^m}{b^n} \equiv b^{m-n}$$

$$(b^m)^n \equiv b^{m \cdot n}$$

$$\log_b(b^m) \equiv m$$

$$b^{\log_b(m)} \equiv m$$

$$\log_b(m) + \log_b(n) \equiv \log_b(mn)$$

$$\log_b(m) - \log_b(n) \equiv \log_b\left(\frac{m}{n}\right)$$

$$\frac{\log_b(m)}{\log_b(n)} \equiv \log_n(m)$$

To be defined expression, the base of a log must be positive and not equal to 1. The argument of a log must be positive.